# PILOT MINIMUM FLIGHT TIME

# REQUIREMENTS

# STUDY

AVIATION RULEMAKING ADVISORY COMMITTEE

TRAINING AND QUALIFICATIONS ISSUES GROUP

FEDERAL AVIATION ADMINISTRATION

MAY 15, 1997

# Pilot Minimum Flight Time Requirements
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Pilot Minimum Flight Time Requirements

## Introduction

Congress directed the Administrator of the Federal Aviation Administration (FAA) to conduct a study to determine whether current minimum flight time requirements applicable to an individual seeking employment as a pilot with an air carrier are sufficient to ensure public safety. (See Appendix A: HR 3539, Section 504 (a) and (b)).

The Administrator authorized the Aviation Rulemaking Advisory Committee (ARAC) to create a working group (WG) to study pilot minimum flight time requirements. This is the report of that working group comprised of members of the aviation community represented by the Air Transport Association (ATA), Allied Pilots Association (APA), Air Line Pilots Association (ALPA), FAA, Flight Safety Foundation (FSF), FlightSafety International (FSI), National Transportation Safety Board (NTSB), Regional Airline Association (RAA), and the University Aviation Association (UAA).(See Appendix B: Working Group Members).

The study scope and purpose are to determine whether current pilot minimum flight time requirements, which apply to an individual seeking employment as a pilot with a U.S. air carrier, are sufficient to ensure public safety.

Early consensus was reached by the WG, ARAC, and FAA that the scope of the study would be scheduled Part 121 and 135 air carriers which operate large multi-crew and multi-engine aircraft. (See Appendix C: References). The Pilot-In-Command (PIC) and Second-In-Command (SIC) positions were studied, but not the Flight Engineer (FE) position.

Normally, an air carrier hires a pilot for the right seat as a SIC/First Officer (FO) in a two-pilot flight deck. Because an operator rarely hires a pilot directly to the PIC position, there was insufficient data to include that occasional practice in this study.

The working group agreed at its first meeting that minimum flight time requirements <u>alone</u> do not ensure public safety. While this statement of agreement is a reasonable

assessment, the statement does require qualification and recognition of several factors.

The FAA's graduated system of airman certification under the existing Code of Federal Regulations (CFR) provides for a "one time" qualifications assessment of minimum acceptable standards. Initial qualification is not intended to ensure that the level of proficiency that a pilot demonstrates at one point--usually at the beginning of a career--is maintained without further demonstration of knowledge, skills, and abilities.

No air carrier pilot occupies a crewmember position in passenger carrying operations until that individual has met various entry level qualifications and has received specified FAA-approved training. The training is designed as initial preparation to ensure that the pilot can function safely in that position. The entry level qualifications are in addition to the requirements for airman certification.

Entry level qualification and competency is followed by operating experience, crew pairing qualification, recurrent, differences, and upgrade training and checking, supervised operating experience, and Line Oriented Flight Training (LOFT). These are enhanced by specialized training, such as Windshear and Crew Resource Management (CRM).

The operating environment in which some of the existing rules were written was a less complex national airspace system with fewer varieties of aircraft types and models, and a less complex level of aviation technology.

More recent regulations continue to change the rules under which most air carriers operate. For example, CRM training requirements under Title 14 Code of Federal Regulations (CFR), Part 121, go into effect on March 20, 1998. After that date, no certificate holder may use a person as a flight crewmember unless that person has completed approved crew resource management (CRM) initial training with that certificate holder or with another certificate holder. Title 14 CFR Part 121 requires Crew Resource Management (CRM) training for flight crews (section 121.404), but allows flightcrew members to receive credit for CRM training received before March 19, 1998, toward meeting all or part of the required initial ground CRM

training (121.406). The benefits of using CRM in well scripted Line Oriented Flight Training (LOFT) include practice and rehearsal of operational management skills like situational awareness, contingency planning, procedural execution, crew workload management, assertiveness, and communication. CRM has always been a requirement of the Advanced Qualification Program (AQP). AQP is a voluntary alternate method for qualifying, training, certifying, and otherwise ensuring competency of crewmembers, aircraft dispatchers, other operations personnel, instructors, and evaluators who are required to be trained or qualified under 14 CFR Parts 121 and 135. The net result of AQP and single visit exemption (SVE) training programs is an increase in mandatory subject matter requirements with a reduction in total length of training.

The first step in the study was the review of the training and checking standard requirements for operations that require either an Airline Transport Pilot (ATP) and/or Commercial Pilot Certificate (CPC) and type rating certification of airmen. The certification process is based on existing ATP Practical Test Standards (PTS) and regulations contained in Title 14 Code of Federal Regulations. A pilot must successfully complete a practical test as part of the certification process. In some cases in which the pilot applicant is enrolled in an FAA-approved air carrier training program, special requirements apply. The applicant must successfully complete the training requirements of that program and receive an instructor's recommendation certifying completion of the training and readiness for the air carrier's initial proficiency check. Under the provisions of current regulations, successful completion of this proficiency check satisfies the practical test requirements for the appropriate certificate or type-rating. This is usually the case for a newly hired airline pilot. The proficiency check (check ride) represents a sample of maneuvers and events and reaffirms that the training program is working correctly. Any pilot who successfully completes a training program is, in theory, capable of passing the proficiency check. The role of the proficiency check is not only to test the pilot candidate, but to validate the training program.

## Background

The National Transportation Safety Board (NTSB) tracks aviation fatalities and publishes annual aviation safety statistics. NTSB's primary measure of aviation safety is fatal accidents per 100,000 aircraft departures. Other measures are fatal accidents per 100,000 aircraft hours and fatal accidents per one million aircraft miles. In addition, NTSB records non-fatal accidents which are defined as any of the following types of incidents without fatalities: flight control system failures, sustained loss of power or thrust produced by two or more engines, damage exceeding $25,000 to property other than an aircraft, in-flight fires, and disabling injuries or illnesses to crewmembers.

NTSB statistics show that the U.S. airlines' safety record has improved steadily through the years, including the years since deregulation. In the 15-year period immediately following deregulation, the major U.S. airlines averaged one fatal accident per 1,400,000 flights. In the 15 years prior to deregulation, the average was one fatal accident per 830,000 flights.

## Federal Government's Role

The Federal Government plays an important role in assuring the safety of air travel since the enactment of the Air Commerce Act of 1926. Although the Airline Deregulation Act of 1978 ended all economic regulation of the airlines, this Act did not end government regulation to ensure safety. All safety requirements and programs in place at or before deregulation are still in force, with new regulations being added when warranted. The FAA is charged with ensuring aviation safety, and enforces these requirements through its aviation safety inspectors.

## Current Regulations, Guidance, and Practices

Certification requirements for pilots are established and mandated by 14 CFR Part 61 "Certification: Pilots and Flight Instructors" and through training at Part 141 pilot schools and Part 142 training centers. For the purpose of this study, certain assumptions were made regarding the minimum certification requirements for a "new hire" pilot with a scheduled air carrier.

Under the current regulations and hiring practices, only a pilot holding at least a Commercial Pilot Certificate with an Instrument Rating will be employed by a U.S. air carrier as a Second-In-Command (First Officer). The minimum flight time requirements for Commercial Pilot certification with an instrument rating represents the minimum new hire flight time requirement. Although there is no evidence that air carriers are hiring pilots with the minimum certification hours, for the purpose of this study, the task force used the minimums as a base line for the study's discussion.

Regulations under Part 61, Certification of Pilots and Flight Instructors, form the basis for all pilot certification requirements. Basic eligibility requirements for a Commercial Pilot Certificate with an Instrument Rating include the following:

* Be at least eighteen (18) years of age;
* Hold a valid second-class medical certificate issued under Part 67 of the CFR;
* Have at least 250 flight hours as a pilot;
* Have at least 100 hours in powered flight, fifty of which must be in an airplane;
* Have 50 hours of cross-country flights with a landing at a point at least 50 nautical miles (nm) from the original departure point; and
* Have a minimum of one cross-country flight with a landing at least 250 miles from the original departure point.

To hold a Commercial Pilot Certificate without a prohibiting night limitation, the pilot must possess an Instrument Rating.

Before the Commercial Pilot Certificate is issued, the pilot applicant must satisfactorily accomplish a knowledge test examination on areas required by the applicable regulations, pass a practical test, and demonstrate proficiency to an FAA inspector or designated pilot examiner in an aircraft that may or may not be the type or complexity of the aircraft generally used in commercial aviation.

Part 141, Pilot Schools, establishes criteria for the facilities, curriculum, instructor qualifications, and evaluation of pilot training schools approved by the FAA.

Training schools that meet the requirements established by Part 141 may, under specified conditions, certificate graduates with fewer than the prescribed minimum hours mandated by Part 61.

Part 141, Appendix D, outlines the training requirements and minimum flight and ground training hours for certification as a Commercial Pilot with Instrument Rating. The pilot applicant for a Commercial Pilot Certificate with Instrument Rating, graduating from a Part 141 approved school, must meet the following requirements:

* Be at least eighteen (18) years of age;
* Have completed a course of training consisting of at least 190 hours of flight training;
* Have no more than 40 hours of the required 190 substituted with instruction received in an approved ground trainer;
* Have logged at lest 100 hours of solo practice;
* Have completed at least 40 hours of solo cross-country flight meeting the distance requirements established by Part 61; and
* Pass the applicable written examinations, course tests, and practical tests conducted by an FAA inspector or designated pilot examiner.

Part 141 allows certain approved pilot schools to train pilots to a performance standard rather than the minimum training hours prescribed by either Part 61 or 141. Although not currently the practice, a pilot with exceptional skills could possibly obtain a Commercial Certificate, be eligible for employment as a crew member in scheduled airline service with fewer than 150 total flight hours.

A relatively recent addition to the regulations, Part 142, Training Centers, establishes criteria for the creation of FAA-approved training centers. These training centers are authorized to conduct all or part of the training required for certification and/or the training required by commercial airlines to qualify pilots. Part 142 provides training centers with the latitude to develop training programs that meet specified performance objectives as opposed to meeting minimum flight hour requirements under

other regulations. These training programs must receive FAA approval before they may be presented.

Each individual training center and its curriculum undergo a comprehensive FAA review and approval process before any training takes place. Part 142 establishes certain minimum facility requirements, instructor and evaluator requirements, training device or flight simulator approval criteria, and approval of a "core curriculum" which includes all the tasks required for airman certification.

Under the current regulations governing scheduled air carriers, each air carrier must, as a condition of its certification, provide an approved training program. Under Part 142, an air carrier may elect to have a training center conduct its FAA-approved training program.

The regulations establish a minimum experience requirement for the certification of airmen. There are no additional regulations that dictate additional flight time requirements that an air carrier must follow when hiring a pilot. Current practices of U.S.-based air carriers indicate that newly hired pilots have flight experience that exceeds the minimum certification requirements. This means that air carriers are establishing hiring minimums which are usually above those required by FAA regulation.

**Aviation Statistics**

The National Transportation Safety Board (NTSB) on February 21, 1997, released the preliminary 1996 aviation accident statistics showing an increase in the number of airline passenger deaths and major accidents over previous years. The 1996 results show the lowest fatal accident rate for scheduled commuter operations in the last 15 years.

Overall, the NTSB's preliminary data show that 1,070 people lost their lives last year in aviation accidents. In 1995, 962 people died in 2,175 accidents.

A total of 380 people were killed in accidents involving U.S. carriers. Of the 380 people, 319 were airline passengers. The 61 others were airline crewmembers and people on the ground.

Scheduled large U.S. airlines, in 1996, surpassed all previous years in the numbers of hours flown, flight hours, and departures. In 1996, large scheduled U.S. carriers logged 12.9 million flight hours, flew more than 5.4 billion miles and had about 8.2 million departures. With few exceptions, these numbers have increased steadily from 1982 statistics, which showed 6.7 million flight hours, 2.8 billion miles flown and 5.2 million departures.

The worst U.S. airline accident in 1996 was the inflight explosion of a TWA Boeing 747, which crashed off Long Island on July 17. All 230 on board were killed. A ValuJet DC-9 crashed in the Florida Everglades on May 11 after an inflight fire. All 110 on board died. Two passengers were killed when a Delta Air Lines MD-88 suffered an uncontained engine failure in Pensacola, Florida on July 6.

Scheduled commuter airlines, those with less than 30 seats, posted their lowest fatal accident rate in 15 years in 1996--0.032 per 100,000 departures. A total of 14 people were killed in the Quincy, Illinois, November 19 runway collision of a commuter aircraft and a private plane. In 1996, there were almost 3.2 million commuter aircraft departures nationwide. As a comparison, nine people were killed in scheduled commuter aircraft accidents in 1995, and 25 lost their lives in 1994.

A recent safety study conducted by the National Transportation Safety Board examined 37 flightcrew-involved major accidents from 1978 through 1990. Total flight experience was obtained for 34 of 37 first officers. Half of the first officers had logged more than 5,110 hours; the least experienced first officer had 1,800 hours. In the 32 accidents for which data were available 53 percent of the first officers were in their initial year as a first officer for that air carrier. Total flight experience was obtained for all 37 captains. Half the captains had logged at least 14,000 hours; the least experienced captain had 4,028 hours.

## Analysis

Pilot-In-Command (PIC) and Second-In-Command (SIC) flight time data were collected and analyzed from all National Transportation Safety Board accident reports from

1991 through 1996. (See Appendix D: Data Charts and Graphs). In addition, the working group created a questionnaire which was distributed by the Regional Airline Association (RAA) and the Air Transport Association (ATA) to its members. The questionnaire results were also analyzed.

The primary purpose of the data collection and analysis was to determine the total flight time in hours that the PIC and SIC had at the time of an accident. This flight time data for PIC and SIC for flight operations conducted under Title 14 Code of Federal Regulations Parts 121 and 135 are included. The data were collected, analyzed, then charted and graphed to provide a visual representation of the PIC and SIC flight times at the time of each accident. These charts and graphs support the working group's analysis and recommendations and are specifically referenced in the study report. (See Appendix D: Charts and Graphs).

The data findings summarized for flight operations conducted under Part 135 Commuter and Part 121 are separated into two summaries.

The Part 135 PIC data analysis is presented in the following items:

1. Pilot in Command data from 65 of 91 (71%) Part 135 accidents indicate that total flight time for PIC's involved in 65 of 91 Part 135 accidents from 1991 through 1996 ranges from a low of 1,150 hours to a high of 32,110 hours (See Appendix D, Chart 1).

This data provides a graphic depiction of the correlation between flight time categories and number of accidents and provides a trend line that shows the accident trend as total flight time increases. (See Appendix D, Chart 2). The following information is a summary of each flight time category:

Part 135 Pilot-In-Command

a. Category 1: No PIC with less than 1,000 hours of flight time was involved in any accident. (See Appendix D, Chart 2).

b. Category 2: Seven accidents (8%) involved PIC's with 1,001-2,000 hours.

c. Category 3: Seven accidents (8%) involved PIC's with 2,001-3,000 hours.

d. Category 4: Thirteen accidents (14%) involved PIC's with 3,001-4,000 hours.

e. Category 5: Thirteen accidents (14%) involved PIC's with 4,001-5,000 hours.

f. Category 6: Three accidents (3%) involved PIC's with 5,001-6,000 hours.

g. Category 7: Eight accidents (9%) involved PIC's with 6,001-7000 hours.

h. Category 8: Two accidents (2%) involved PIC's with 7,001-8,000 hours.

i. Category 9: Five accidents (5%) involved PIC's with 8,001-9,000 hours.

j. Category 10: One accident (1%) involved a PIC with 9,001-10,000 hours.

k. Category 11: Four accidents (3%) involved PIC's with 10,001-15,000 hours.

l. Category 12: One accident (1%) involved a PIC with 15,001-20,000 hours.

m. Category 13: One accident (1%) involved a PIC with 20,001-40,000 hours.

2. Second-in-Command data from 40 of 91 (44%) Part 135 accidents indicate that total flight time for SIC's involved in the 40 accidents analyzed from 1991 through 1996 ranges from a low of 1,039 hours to a high of 11,542 hours (See Appendix D, Chart 1).

There is a correlation between flight time categories and number of accidents. A trend line shows the accident trend as total flight time increases. (See Appendix D, Chart 2). The following information is a summary of each flight time category:

Part 135 Second-In-Command

a. Category 1: No SIC with less than 1,000 hours flight time was involved in an accident.

b. Category 2: Eleven accidents (28%) involved SIC's with 1,001-2,000 hours.

c. Category 3: Thirteen accidents (32%) involved SIC's with 2,001-3,000 hours.

d. Category 4: Six accidents (14%) involved SIC's with 3,001-4,000 hours.

e. Category 5: One accident (3%) involved an SIC with 4,001-5,000 hours.

f. Category 6: Six accidents (14%) involved SIC's with 5,001-6,000 hours.

g. Category 7: No accident involved a SIC with 6,001-7000 hours.

h. Category 8: One accident (3%) involved a SIC with 7,001-8,000 hours.

i. Category 9: One accident (3%) involved a SIC with 8,001-9,000 hours.

j. Category 10: No accident involved a SIC with 9,001-10,000 hours.

k. Category 11: One accident (3%) involved a SIC with 10,001-15,000 hours.

3. Pilot-in-Command data from 103 of 153 (67%) Part 121 accidents indicates that total flight time for PIC's involved in the 103 accidents analyzed from 1991 through 1996 ranges from a low of 2,174 hours to a high of 52,000 hours (See Appendix D, Charts 4 and 5).

There is a correlation between flight time categories and numbers of accidents. A trend line shows the accident trend as total flight time increases. (See Appendix D, Chart 5)

Note that Flight Time Category-1 has pilot time beginning at 2,001 flight hours. The data indicate that no PIC with less than 2,000 hours of total flight time was involved in an accident for flight operations conducted under Part 121. The following information is a summary of each flight time category:

Part 121 Pilot-In-Command

a. Category 1: Two accidents (2%) involved PIC's with 2,001-3,000 hours.

b. Category 2: Four accidents (4%) involved PIC's with 3,001-4,000 hours.

c. Category 3: Four accidents (4%) involved PIC's with 4,001-5,000 hours.

d. Category 4: Three accidents (3%) involved PIC's with 5,001-6,000 hours.

e. Category 5: Four accidents (4%) involved PIC's with 6,001-7,000 hours.

f. Category 6: Six accidents (6%) involved PIC's with 7,001-8000 hours.

g. Category 7: Seven accidents (7%) involved PIC's with 8,001-9,000 hours.

h. Category 8: Ten accidents (10%) involved PIC's with 9,001-10,000 hours.

i. Category 9: Twenty-nine accidents (28%) involved PIC's with 10,001-15,000 hours.

j. Category 10: Twenty-six accidents (25%) involved PIC's with 15,001-20,000 hours.

k. Category 11: Eight accidents (8%) involved PIC's with 20,001-52,000 hours.

4. SIC data from 103 of 153 (67%) Part 121 accidents indicate that total flight time for PIC's involved in the 103 accidents analyzed from 1991-1996 ranges from a low of 350 hours to a high of 50,000 (See Appendix D, Charts 4 and 6).

A correlation between flight time categories and number of accidents can be made; also, a trend line shows the accident trend as total flight time increases. The following information is a summary of each flight time category:

Part 121 Second-In-Command

a. Category 1: Two SIC's (2%) with less than 500 hours flight time were involved in accidents; one had 350 hours, while the other had 442 hours total flight time.

b. Category 2: Two accidents (2%) involved SIC's with 501-1000 hours; one had 658 hours total flight time.

c. Category 3: Three accidents (3%) involved SIC's with 1,001-2,000 hours.

d. Category 4: Twelve accidents (12%) involved SIC's with 2,001-3,000 hours.

e. Category 5: Sixteen accidents (15.5%) involved SIC's with 3,001-4,000 hours.

f. Category 6: Fourteen accidents (13.5%) involved SIC's with 4,001-5,000 hours.

g. Category 7: Eight accidents (8%) involved SIC's with 5,001-6,000 hours.

h. Category 8: Six accidents (6%) involved SIC's with 6,001-7,000 hours.

i. Category 9: Seven accidents (7%) involved SIC's with 7,001-8,000 hours.

j. Category 10: Six accidents (6%) involved SIC's with 8,001-9,000 hours.

k. Category 11: Six accidents (6%) involved SIC's with 9,001-10,000 hours.

l. Category 12: Ten accidents (10%) involved SIC's with 10,001-15,000 hours.

m. Category 13: Eight accidents (8%) involved SIC's with 15,001-20,000 hours.

n. Category 14: Three accidents (3%) involved SIC's with 20,001-50,000 hours.

Based on analyzed data, the following findings are:

1. No SIC's involved in accidents while conducting Part 135 operations had less than 1,000 hours of total pilot flight time;

2. Three (2%) of the 153 analyzed accidents involved SIC's from Part 121 operations who had less than 1,000 hours of total pilot flight time.

3. No accidents involved PIC's operating under Part 135 with less than 1,000 hours total pilot time.

4. Forty of the 91 (44%) Part 135 accidents analyzed involved PIC's with less than 5,000 hours total pilot flight time.

5. Ten of the 153 (7%) Part 121 accidents analyzed involved PIC's with less than 5,000 hours total pilot time.

6. Sixty-three (41%) of the 153 Part 121 accidents analyzed involved PIC's with over 10,000 hours total pilot time.

The Pilot Minimum Flight Time Requirement Questionnaire was distributed to air carriers by both the Regional Airline Association (RAA) and the Air Transport Association (ATA). Twenty-four RAA and eight ATA represented air carriers returned questionnaires. Results are reported for both organizations.

Responses received from RAA members included responses from 17 Part 121 only air carriers; 2 part 135 only air carriers; and 4 Part 121/135 air carriers. All 8 ATA responses were made by Part 121 only air carriers.

As the study focuses on minimum flight time requirements, the working group wanted to determine the

current minimum flight time requirements required by the air carriers for prospective employees.

| Hours | Pilot-In-Command RAA | ATA |
|---|---|---|
| 0-250 | 0 | 1 |
| 251-500 | 0 | 0 |
| 501-1000 | 0 | 1 |
| 1001-1500 | 1 | 1 |
| 1501-2000 | 4 | 1 |
| 2001-2999 | 6 | 1 |
| 3000+ | 9 | 1 |

| Hours | Second-In-Command RAA | ATA |
|---|---|---|
| 0-250 | 0 | 0 |
| 251-500 | 2 | 0 |
| 501-1000 | 3 | 1 |
| 1001-1500 | 6 | 1 |
| 1501-2000 | 2 | 2 |
| 2001-2999 | 4 | 4 |
| 3000+ | 1 | 0 |

When asked average flight time hours of pilots hired during the past seven to eight years, RAA members reported that no pilots were hired with less than 1001 hours; most pilots that were hired had 2001-3000+ flight hours.

When asked if the operator's records indicate any correlation between the number of accidents and pilot total flight hours flown in the type airplane involved, twenty-two RAA members said "no"; one said "yes"; and one responded "unknown." Six ATA members responded "no", while 3 reported that they had no accidents to study.

When asked if their company records indicate any correlation between the number of incidents and pilot flight hours, 20 RAA members said "no"; one said "yes"; and 3 made no response or reported "unknown." Six ATA members found no correlation; one replied "yes"; and 2 had no incidents to study.

When asked if, based on experience, the operator had determined that pilots with 2000+ hours of flight time are less likely to have mishaps than pilots with 1000 or less hours flight time, six RAA members replied "yes", while

fifteen said "no". ATA members were also divided in their responses: 3 replied "yes", 4 replied "no", and 1 had no experience with low time pilots.

When the operators were asking about pilot hiring, 23 RAA members reported that even if all factors (qualifications and experience) are equal, they do not always hire the applicant with the highest total flight time; one made no response. The ATA membership made similar responses with 7 reporting that they would not always hire the applicant with the highest total flight time, even with all factors being equal; one did report that it would always hire the applicant with the highest total flight time.

Six RAA members hire SIC's with less than 1000 hours total time, while 16 do not. One does not have any SIC's, and one made no response. Seven ATA member organizations do not hire SIC's with less than 1000 hours total time, but one air carrier reported that it does.

Air carriers were asked if they would hire SIC's with less than 1000 total flight time. Thirteen RAA members replied "no"; seven replied "yes"; three did not respond. Six ATA members replied "no", and two replied "yes".

The air carriers were asked if, in their opinions, considering the current and expected availability of qualified pilots over the next five years, "Will there be a compromise to safety if pilots are hired with less than 1000 flight hours?".

| RAA | ATA |
|---|---|
| 5--yes | 5--yes |
| 13--no | 3--no |

One RAA member qualified the response by writing, "No compromise, if training and background are of quality." Another responded, "Depends upon the quality of the training"; one made no response.

When asked to give the number of hours that they think should be the minimum flight time requirement for air carrier first officers, the carriers gave a wide range of hours.

RAA responses varied and are depicted below:

| Hours | Responses |
|---|---|
| 300 | 1 |
| 500 | 2 |
| 600 | 1 |
| 1000 | 1 |
| 1000-1500 | 1 |
| 1000+ | 1 |
| 1500 | 6 |
| 1500-2000 | 1 (unless trng maximum designed for lower time) |
| 3000 | 1 |

The ATA response from all eight carriers was, "All believe the minimum flight time requirements for air carriers hiring first officers should be left to the hiring carrier."

## VIII. Conclusions

The reviewed data show no negative relationship between minimum flight hours (less than 1,000 hours) and NTSB Part 121 and 135 investigated accidents. It follows that flight time alone is not an adequate measure of pilot skill or proficiency.

A commercial pilot with an instrument rating can be employed as a SIC with a minimum of 150 (14 CFR Part 141) to 250 hours total time (14 CFR Part 61).

Operators certificated under 14 CFR Parts 121 and 135 are required to provide initial technical and skills training and evaluation by a check airman to new-hire pilots before they are permitted to fly the line. This training is augmented by recurrent training and specialized training in CRM and other topics.

Industry practice, demonstrated by the results of the survey, is to hire pilots with minimum flight hour experience at least two times greater than those required for the commercial pilot's certificate.

Accident statistics for 14 CFR Parts 121 and 135 operators do not show a relationship between pilot flight times and accidents.

Because recent hiring practices at major airlines have normally excluded individuals having fewer than 250 hours, the relationship between minimum flight hour experience lower than this level, but higher than that required for the commercial pilot's certificate, and accident risk cannot be adequately determined.

Air carrier aircraft accidents are now so rare that reviewing only accident data, which may have been valid in earlier times when accidents were more common, is no longer adequate. Accidents are so uncommon, that the absence of a causal factor related to flight time in recent accidents, may provide no assurance this factor will not appear in future accidents. Isolated accident statistics alone are no longer an adequate way to identify problems. While accidents should be examined to find problems which are repetitive, today's safer air carrier environment requires a more comprehensive way of studying and identifying and isolating both existing and potential problems. Such study would go beyond the very limited data provided through an analysis of recent accident statistics

FAA certification requirements alone are not designed to ensure that entry-level pilot applicants have all the experience and skills required to safely operate air carrier aircraft in passenger operations.

The minimum type and quantity of additional training required to prepare air carrier pilot candidates who have been trained to the qualification levels is definitively defined in 14 CFR part 121, subparts N and O, part 135, subpart H, and Special Federal Aviation Regulation (SFAR) 58. In reality, air carriers train to a level that exceeds these minimum requirements.

Some U.S. air carriers have placed great weight on a candidate's flight hour totals as a major measure of flight skills and experience. Individually logged flight time presented by pilots as the sole means to meet hiring criteria is "proof by assertion" for which there is no means of positive validation. In fact, flight time alone, without consideration for other factors such as aptitude, motor skill development, training, and operating experience, do not provide an adequate picture of an individual's knowledge and skill.

The study group found no relationship between pilots hired with minimum flight time and accidents. Thus, raising flight time requirements cannot be relied upon as an objective method by which to improve public safety. Other, more productive areas to be considered for this purpose include developing measures of minimum knowledge, improved evaluating/validation of pilot experience and flight time, and evaluating skills and abilities necessary for successful and safe operations in the air carrier environment.

Based on the increased complexity of both the aircraft operating environment and the sophistication of aircraft and aircraft operating systems, flight crew training and evaluation must keep pace with the demands of the future operating environment.

**Recommendations**

The study group developed recommendations based upon the premise that minimum flight time requirements alone do not provide an adequate criteria to ensure public safety. Implementation of these recommendations may be accomplished through joint Industry, NTSB, and FAA initiatives.

Recommendation One: Develop industry-wide air carrier minimum employment standards and guidelines that go beyond minimum flight times and include, but are not limited to, factors such as screening for motor skills, intellectual capability, psychological stability, physical well-being, and sound moral character and judgment.

Recommendation Two: Ensure that the FAA and NTSB accident and incident reports and databases contain the pilot flight times for all flightcrew members.

Appendix A: HR 3539, Section 504 (a) and (b)

SEC. 504. STUDY OF MINIMUM FLIGHT TIME.

(a) STUDY.--The Administrator of the Federal Aviation Administration shall conduct a study to determine whether current minimum flight time requirements applicable to individuals seeking employment as a pilot with an air carrier are sufficient to ensure public safety.

(b) REPORT.--Not later than 1 year after the date of the enactment of this Act, the Administrator shall transmit to Congress a report on the results of the study.

Appendix B: Task Force Members

| | |
|---|---|
| Evan Byrne | Office of Aviation Safety (AS-50)<br>National Transportation Safety Board |
| James Curland | Legislative Affairs Committee<br>Allied Pilots Association |
| Michael Dugan | Director, Operations<br>Air Transport Association |
| Doug Schwartz | Director, Standards<br>FlightSafety International |
| Jack Sellers | Tulsa Community College<br>University Aviation Association |
| James Ward,<br>Chairman | Pilot Training Committee<br>Air Line Pilots Association |

Federal Aviation Administration

| | |
|---|---|
| Larry Basham | Flight Standards Service |
| Ruth Ann Hodges,<br>Project Manager | Flight Standards Service |
| Don Streeter | Office of Aviation Safety |

Alternates

| | |
|---|---|
| Michael Cronin | Allied Pilots Association |
| Al Gleske | FlightSafety International |
| Paul McDuffee | University Aviation Association |
| Michael Shelton | Air Line Pilots Association |

## Appendix C: Glossary

Air carrier--Operator, airline, certificate holder, carrier, and air carrier are interchangeable terms and refer to a person or organization that conducts business under 14 Code of Federal Regulations, Parts 119, 121, 127, and/or 135.

Certificate holder--Operator, airline, air carrier, carrier, and certificate holder are interchangeable terms which refer to a person or organization that conducts business under 14 Code of Federal Regulations, Parts 119, 121, and/or 135.

Code of Federal Regulations (Title 14)

A. Part 119--Certification: Air Carriers and Commercial Operators. This part (119.1) applies to each person operating or intending to operate civil aircraft--(1) As an air carrier or commercial operator, or both, in air commerce; or
(2) When common carriage is not involved, in operations of U.S.-registered civil airplanes with a seat configuration of 20 or more passengers, or a maximum payload capacity of 6,000 pounds or more....

B. Part 121--Operating Requirements: Domestic, Flag, and Supplemental Operations. This part (121.1) prescribes rules governing--(a) The domestic, flag, and supplemental operations of each person who holds or is required to hold an Air Carrier Certificate or Operating Certificate under part 119 of this chapter. (b) Each person employed or used by a certificate holder conducting operations under this part, including maintenance, preventive maintenance, and alteration of aircraft....

C. Part 135--Operating Requirements: Commuter and On-Demand Operations. (a) This part (135.1) prescribes rules governing--(1) The commuter or on-demand operations of each person who holds or is required to hold an Air Carrier Certificate or Operating Certificate under part 119 of this chapter. (2) Each person employed or used by a certificate holder conducting operations under this part including the maintenance, preventative maintenance and alteration of an aircraft....

Commuter--A FAR Part 135 operator who carries passengers on at least 5 round trips per week or at least 1 route between 2 or more points according to its published flight schedule that specifies the times, days of the week, and places between which those flights are performed.

Direct air carrier--A person who provides or offers to provide air transportation and who has control over the operational functions performed in providing that transportation.

Duty position--Refers to the functional or operating position of a crewmember or aircraft dispatcher. For Parts 121 and 135 operations, duty positions are pilot-in-command (PIC), second-in-command (SIC), flight engineer (FE), flight attendant (FA), flight navigator (NAV), and aircraft dispatcher (AD).

Incident--An occurrence involving the operation of one or more aircraft in which a hazard or a potential hazard to safety is involved but which is not classified as an accident due to degree of injury and/or extent of damage.

Kind of operation--Means one of the various operations a certificate holder is authorized to conduct, as specified in its operations specifications, i.e., domestic, flag, supplemental, commuter, or on-demand operations.

NTSB Classifications--A means to define the extent of an accident as used by the National Transportation Safety Board:

A. Major--an accident in which any of three conditions is met: a Part 121 aircraft was destroyed, or there were multiple fatalities, or there was one fatality and a Part 121 aircraft was substantially damaged.

B. Serious--an accident in which at least one of two conditions is met: there was one fatality without substantial damage to a Part 121 aircraft, or there was at least one serious injury and a Part 121 aircraft was substantially damaged.

C. Injury--a nonfatal accident with at least one serious injury and without substantial damage to a Part 121 aircraft.

D. Damage—an accident in which no person was killed or seriously injured, but in which any aircraft was substantially damaged.

On-demand operation--Any operation for compensation or hire that is a passenger-carrying operation in which the departure time, departure location, and arrival location are specifically negotiated with the customer or the customer's representative.

Passenger-carrying operation--Any aircraft operation carrying any person, unless the only persons on the aircraft are those identified in Part 121.583(a) or 135.85 of this chapter (subchapter G), as applicable.

Pilot deviation--the actions of a pilot that result in the violation of a Federal Aviation Regulation or a North American Aerospace Defense Command (NORAD Air Defense Identification Zone (ADIZ) tolerance.

Pilot-In-Command (PIC)--The person who has responsibility for the flight; occupies the left seat; the captain.

Scheduled operation--Any common carriage passenger-carrying operation for compensation or hire conducted by an air carrier or commercial operator for which the certificate holder or its representative offers in advance the departure location, departure time, and arrival location. It does not include any operation that is a charter operation for which the certificate holder or its representative offers in advance the departure location, departure time, and arrival location. It does not include any operation that is a charter operation.

Second-In-Command (SIC)--The person who assumes responsibility for the flight if the pilot-in-command becomes incapacitated; the person who occupies the right seat; co-pilot; first officer.

Appendix D: Data Charts and Graphs

Chart 1 Part 135 Accident/Flight Time Data Sheet

Chart 2 Part 135 PIC Flight Time Variation

Chart 3 Part 135 SIC Flight Time Variation

Chart 4 Part 121 Accident/Flight Time Data Sheet

Chart 5 Part 121 PIC Flight Time Variation

Chart 6 Part 121 SIC Flight Time Variation

# CHART 1

## Part 135 Accident/Flight Time Data Sheet

| ACCIDENT | PIC T/T/91 | SIC T/T/91 | ACCIDENT | PIC T/T/92 | SIC T/T/92 | ACCIDENT | PIC T/T/93 | SIC T/T/93 | Part 135 ACCIDENT | PIC T/T/94 | SIC T/T/94 | ACCIDENT | PIC T/T/95 | SIC T/T/95 | ACCIDENT | PIC T/T/96 | SIC T/T/96 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 167PC | 5000 | 3600 | 55000 | 7700 | 2500 | 342PX | 6500 | 2900 | N304UE | 3660 | 2433 | 242SS | | | 159YV | | 2060 |
| 683AV | 8808 | 8056 | 2714A | 5397 | | 18YV | 2628 | 3000 | N2718Y | 6500 | 5500 | 4480X | | | 8374T | | |
| 9651M | 3000 | | 76RL | 3300 | | 245RP | 3700 | 4600 | N6470H | 3200 | | 6479H | | | 143SA | | |
| 5785C | | | 13GA | 4700 | | 4182G | 3200 | | N4109D | 1810 | 1220 | 130UE | | 1369 | 154ZV | | 1050 |
| 308SC | 3760 | | 723CA | 4312 | 2695 | 8257A | 10000 | | N495UE | 4200 | 2755 | 6478H | | | 607PA | | |
| 270AS | 11724 | 5720 | 84547 | 4800 | | 159PC | 12700 | 1600 | N31YV | 6900 | 4000 | 1719U | | | 216CS | | 2400 |
| 4593T | 1490 | | 9909Z | 4600 | | 8768Q | 1600 | | N5715C | 5200 | | 34010 | | 1950 | 4109E | | |
| 21LU | 4000 | | 3555C | 8700 | | 6487H | 32110 | | 1238K | 8278 | | 268UE | | 5550 | 168CA | | 7500 |
| 7217L | 4058 | 1494 | 27465 | | | 13147 | 1150 | | N918AE | 3810 | 3452 | 256AS | | 1192 | 2692P | | |
| 67941 | 2917 | | 355CA | 6634 | 2537 | 24706 | 3600 | 3300 | 39ZV | 3400 | 3800 | 88BC | | | 403N | | |
| 405AE | 6900 | 3300 | 118GP | | | 401NA | 3650 | | | | | 5293X | | | 87GL | | 1950 |
| 339TE | 4250 | 6000 | 2691W | 4500 | 2005 | 4112D | 11000 | | | | | | | | | | |
| 68HA | 5107 | | 9975M | 2800 | | 818AN | 4185 | | | | | | | | | | |
| 33701 | 4243 | 11542 | 70364 | 1421 | | 206RH | 2800 | | | | | | | | | | |
| 120FA | 3200 | 2200 | 94AK | 2000 | | 550TD | 4400 | 3000 | | | | | | | | | |
| 7353Q | 6400 | | 8402S | 6557 | | 334PX | 7853 | 2000 | | | | | | | | | |
| 299GL | 17653 | 2522 | 76RL | 1400 | | | | | | | | | | | | | |
| 724CA | 2850 | 1039 | 404AE | 14000 | 5976 | | | | | | | | | | | | |
| 350MR | 3000 | | 5074J | 6582 | | | | | | | | | | | | | |
| 307SC | 8900 | | 250TJ | | | | | | | | | | | | | | |
| | | | 67941 | 4867 | | | | | | | | | | | | | |
| | | | 317BH | 3800 | 6000 | | | | | | | | | | | | |
| | | | 139PA | 9000 | 1450 | | | | | | | | | | | | |

CHART 2

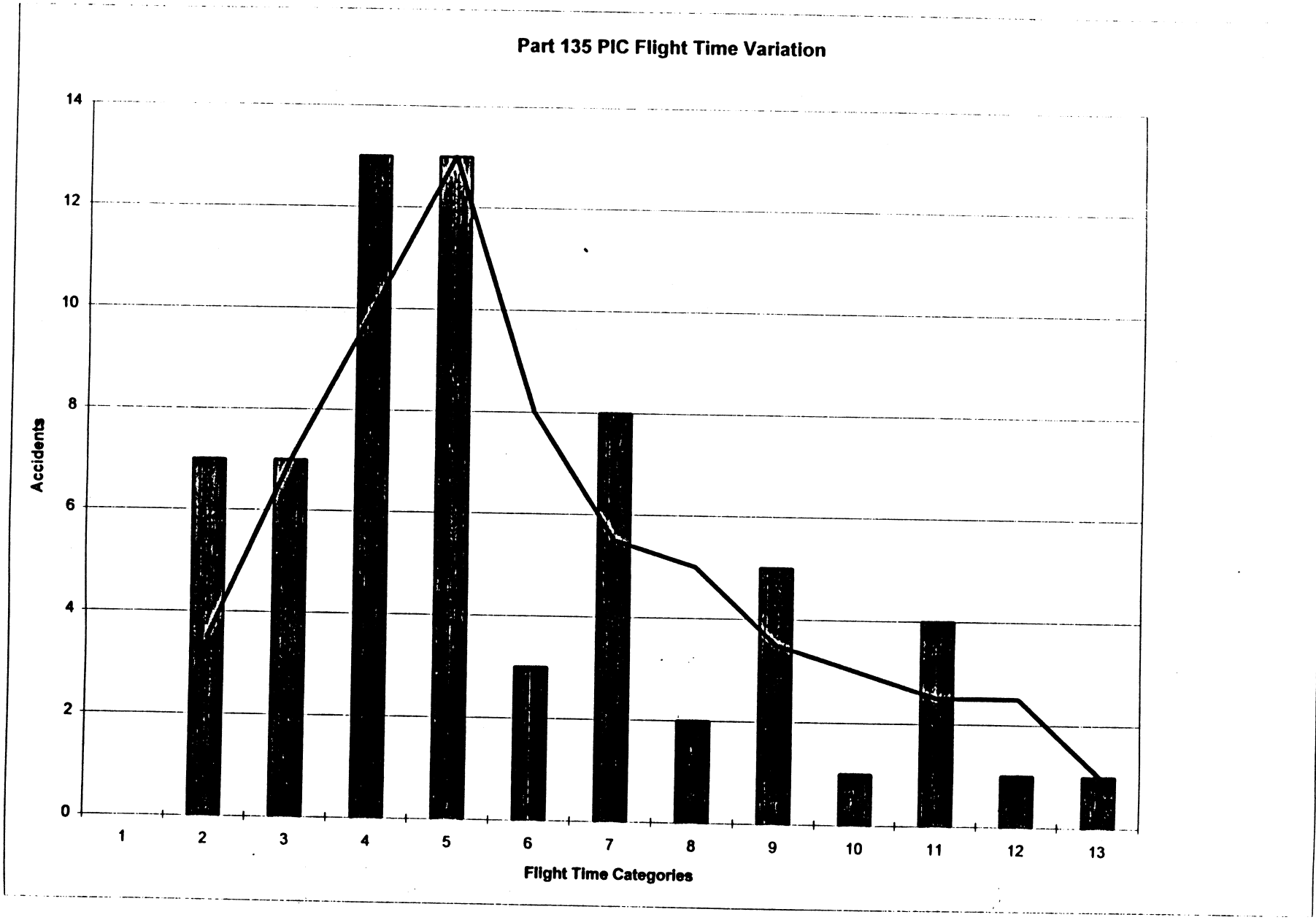

Part 135 PIC Flight Time Variation
Accidents
14
12
10
8
6
4
2
0
1
2
3
4
5
6
7
8
9
10
11
12
13
Flight Time Categories

CHART 3

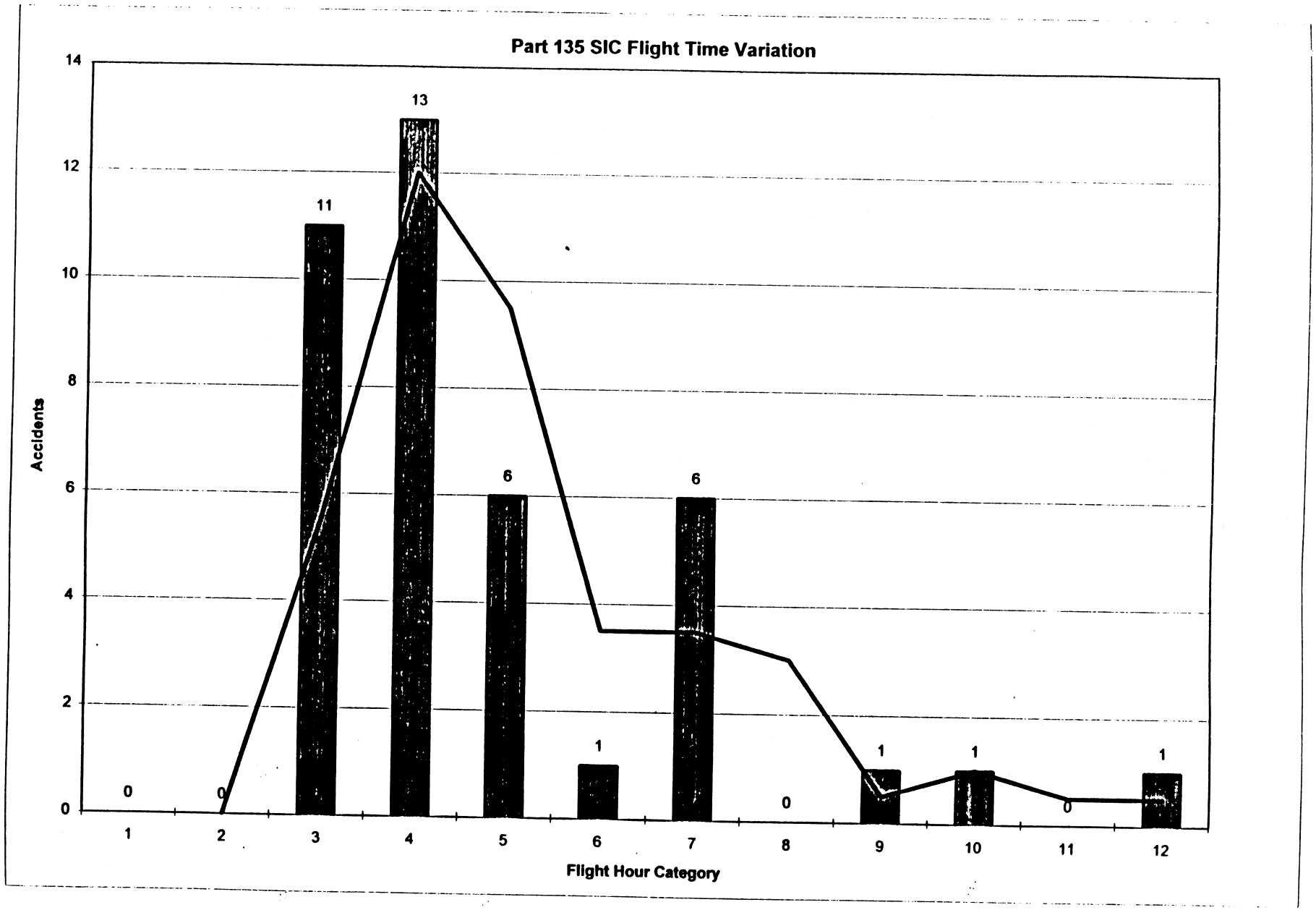

Part 135 SIC Flight Time Variation
Accidents
Flight Hour Category
0
2
4
6
8
10
12
14
1
2
3
4
5
6
7
8
9
10
11
12
0
0
11
13
6
1
6
0
1
1
0
1

CHART 5

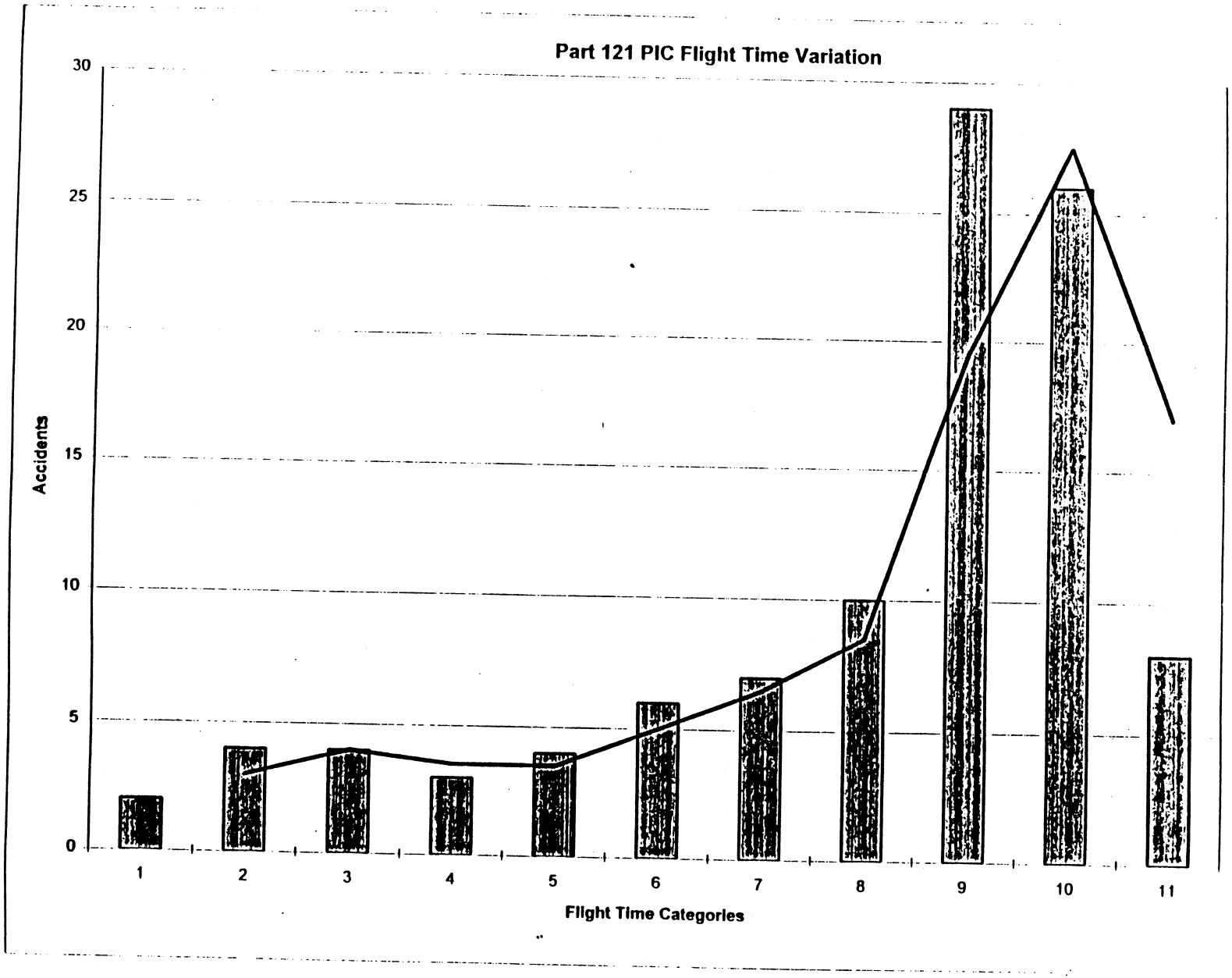
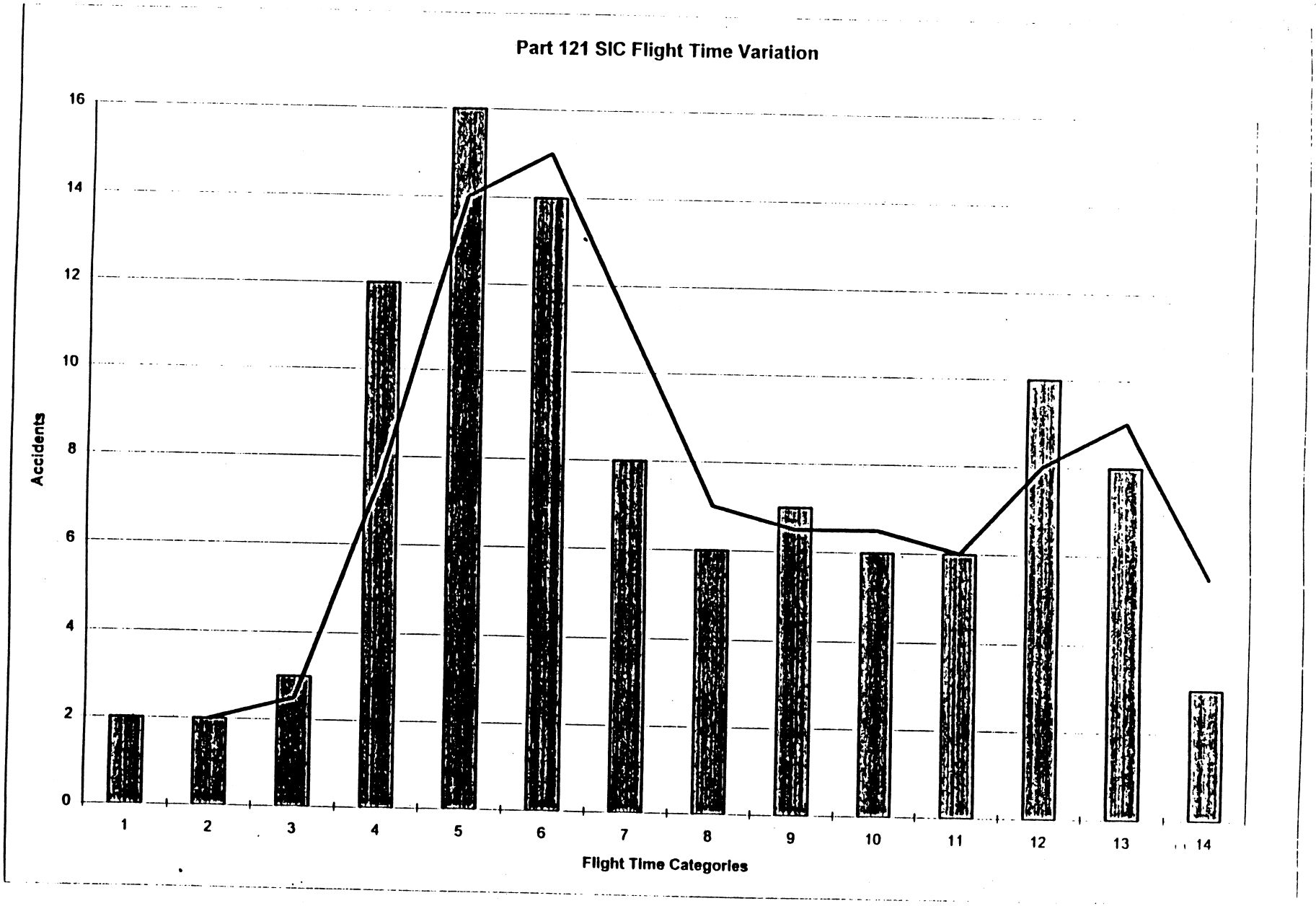

Part 121 PIC Flight Time Variation
Accidents
30
25
20
15
10
5
0
1
2
3
4
5
6
7
8
9
10
11
Flight Time Categories

CHART 6


Part 121 SIC Flight Time Variation
Accidents
16
14
12
10
8
6
4
2
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Flight Time Categories